

### REMARKS

Claims 1-15, 17 and 18 remain pending in the application.

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2007/0181274, when discussing the application description, rather than to page and line of the specification as filed.

The rejection of Claims 1-15 and 17-18 under 35 U.S.C. § 103(a) as unpatentable over US 6,083,348 (Auhorn et al) in view of US 4,444,667 (Burkert et al) as evidenced by US 4,753,710 (Langley et al), is respectfully traversed.

As previously explained, and as described in the specification at paragraphs [0002]-[0004], homo- and/or copolymers of N-vinylformamide having varying degrees of hydrolysis have been used in the prior art as additives in the production of paper. The specification describes at paragraph [0005] that although the polymers containing vinylamine units and disclosed in the above-discussed prior art are good fixing agents or drainage aids, flocculants and retention aids, problems with deposition in the wire part, press section and drying section of a paper machine still occur in practice when processing paper stocks containing interfering substances, such as coated broke. The paper machine then has to be shut down and cleaned.

The present invention successfully addresses these problems by using a polymer of the type discussed above, wherein the degree of hydrolysis is from 1 to 20 mol%, which polymer is added to a high-consistency paper stock, the high-consistency stock is diluted with water to a low-consistency stock, and the low-consistency stock is drained.

Thus, as recited in Claim 1, an embodiment of the present invention is a process for producing paper, board or cardboard by draining a paper stock comprising interfering substances in the presence of polymers which comprise vinylamine units and which have an average molar mass  $M_w$  of at least 1 million, comprising preparing a high-consistency paper

stock, metering at least one polymer comprising vinylamine units and having **an average molar mass  $M_w$  of at least 1 million and a degree of hydrolysis of from 1 to 20 mol%** into the high-consistency stock, diluting with water the high-consistency stock to a low-consistency stock, and draining the low-consistency stock.

(Emphasis added.)

Of record are comparative data in the specification and comparative data submitted in the form of the [First] Esser Declaration, which Applicants relied on as “secondary consideration” evidence for purposes of demonstrating patentability.

In affirming this rejection, the Board agreed with the Examiner’s findings that Esser did not declare in the First Esser Declaration that the results were unexpected and that the evidence was not commensurate in scope with the claims (Decision at 6-9).

To that end, the newly-submitted Second Esser Declaration contains additional comparative data for polymers comprising vinylamine units having  $M_w$  and degree of hydrolysis values closer to the end points of the above-emphasized range for  $M_w$ . For ease of reference, the Second Esser Declaration includes data from the specification and the First Esser Declaration, except Comparative Examples 4, 5 and 6, which add the polymer to low-consistency stock, with the new data presented in **bold**. Thus, the data in the Second Esser Declaration includes all the data of record for polymers comprising vinylamine units added to high-consistency stock.

The Second Esser Declaration declares that the results are unexpected and explains why. In addition, the new data include results for  $M_w$  closer to the 1 million minimum (1.2 million and 800,000) than the previous data (2 million and 400,000).

Thus, even if one of ordinary skill in the art were to combine Auhorn et al and Burkert et al, with Langley et al, the above-discussed superior and unexpected results could not have predicted, especially in view of the fact that Auhorn et al discloses no degree of hydrolysis of

polymers containing vinylamine units, and Burkert et al discloses the relatively broad degree of hydrolysis of 10 to 90%.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The provisional rejection of Claims 1-3 and 5-9 on the ground of nonstatutory obviousness-type double patenting over Claims 1, 5, 6, 8-10 and 12 of copending Application No. 11/719,826 ('826 application) in view of Auhorn et al,

and the rejections on the ground of nonstatutory obviousness-type double patenting over

claims of US 8,029,647 ('647 patent) in view of Auhorn et al, and  
claims of US 7,918,965 ('965 patent) in view of Auhorn et al,  
are respectfully traversed.

The Board affirmed the above provisional rejection and rejections on the basis that Applicants had not shown any criticality in degree of hydrolysis (Decision at 10). However, the above-discussed Second Esser Declaration is pertinent to these rejections. The discussion above is hereby incorporated by reference. Moreover, with regard to the '826 application, the claims thereof are silent with regard to hydrolysis and thus, the Board erred in finding a *prima facie* case.

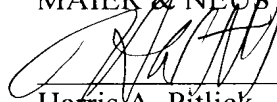
For all the above reasons, it is respectfully requested that the provisional rejection and rejections be withdrawn.

Application No. 10/590,933  
Reply to Decision of the Board of Patent Appeals and Interferences  
mailed December 2, 2011

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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